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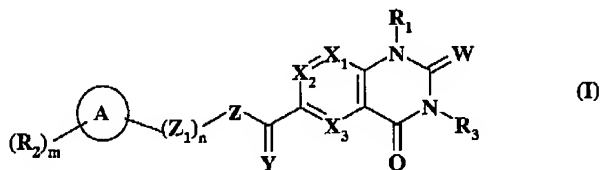
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AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of claims:

Claim 1 (currently amended). A compound selected from those of formula (I):



in which:

R₁ represents hydrogen, a group selected from:

- hydrogen, amino;
- ~~(C₁-C₆)alkyl, (C₃-C₆)alkenyl, (C₃-C₆)alkynyl, mono(C₁-C₆)alkylamino(C₁-C₆)alkyl, di(C₁-C₆)alkylamino(C₁-C₆)alkyl, aryl, aryl(C₁-C₆)alkyl, heterocycle, and 3- to 6 membered cycloalkyl(C₁-C₆)alkyl, these groups being unsubstituted or substituted with one or more groups, which may be identical or different, selected from amino, (C₁-C₆)alkyl, cyano, halo(C₁-C₆)alkyl, C(=O)OR₄, OR₄, and SR₄, in which R₄ represents hydrogen or (C₁-C₆)alkyl;~~

W represents an oxygen atom, a sulphur atom, or a group =N-R', in which R' represents (C₁-C₆)alkyl, hydroxyl, or cyano,

X₁ and X₃ represent, independently of each other, a group -C-R₆ in which R₆ represents a group selected from hydrogen, (C₁-C₆)alkyl, amino,

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mono(C₁-C₆)alkylamino, di(C₁-C₆)alkylamino, hydroxyl, (C₁-C₆)alkoxy, and halogen;

X₂ is nitrogen;

Y represents a group selected from oxygen atom, sulphur atom, -NH, and -N(C₁-C₆)alkyl,

Z represents:

- an oxygen atom, a sulphur atom,
- or a group -NR₇ in which R₇ represents a group selected from hydrogen, (C₁-C₆)alkyl, aryl(C₁-C₆)alkyl, cycloalkyl, aryl, and heteroaryl, and
- when Y is an oxygen atom, a sulphur atom, or a group -N(C₁-C₆)alkyl, Z optionally represents a carbon atom which is unsubstituted or substituted with a (C₁-C₆)alkyl, an aryl, an aryl(C₁-C₆)alkyl, an aromatic or non-aromatic heterocycle or a cycloalkyl,

n is an integer from 1 to 8 inclusive,

Z₁ represents -CR₈R₉, wherein R₈ and R₉, independently of each other, represent a group selected from hydrogen, (C₁-C₆)alkyl, halo(C₁-C₆)alkyl, halogen, amino, OR₄, SR₄ or C(=O)OR₄ in which R₄ represents a hydrogen or (C₁-C₆)alkyl, and

- when n is greater than or equal to 2, the hydrocarbon chain Z₁ optionally contains one or more multiple bonds,
- and/or one of the carbon atoms in the hydrocarbon chain Z₁ may be replaced with an oxygen atom, a sulphur atom which is unsubstituted or substituted with one or two oxygen atoms, or a nitrogen atom which is unsubstituted or substituted with a (C₁-C₆)alkyl,
- and when one of the carbon atoms in the hydrocarbon chain Z₁ is replaced with a sulphur atom which is unsubstituted or substituted with one or two oxygen

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atoms, then the group $-C(=Y)-Z$ optionally may be absent in the general formula (I),

A represents ~~an a group selected from:~~

- aromatic or non-aromatic, 5- or 6-membered monocycle comprising from 0 to 4 heteroatoms selected from nitrogen, oxygen and sulphur, ~~and~~
- ~~bicycle, composed of two aromatic or non-aromatic, 5 or 6 membered rings, which may be identical or different, comprising from 0 to 4 heteroatoms selected from nitrogen, oxygen and sulphur,~~

m is an integer from 0 to 7 inclusive,

the group(s) R_2 , which may be identical or different, is (are) selected from (C_1-C_6) alkyl, halogen, $-CN$, NO_2 , SCF_3 , $-CF_3$, $-OCF_3$, $-NR_{10}R_{11}$, $-OR_{10}$, $-SR_{10}$, SOR_{10} , $-SO_2R_{10}$, $-(CH_2)_kSO_2NR_{10}R_{11}$, $-X_5(CH_2)_kC(=O)OR_{10}$, $-(CH_2)_kC(=O)OR_{10}$, $-X_5(CH_2)_kC(=O)NR_{10}R_{11}$, $-(CH_2)_kC(=O)NR_{10}R_{11}$, and $-X_4-R_{12}$ in which:

- X_5 represents a group selected from oxygen, sulphur optionally substituted by one or two oxygen atoms, and nitrogen substituted by hydrogen or (C_1-C_6) alkyl,

- k is an integer from 0 to 3 inclusive,

- R_{10} and R_{11} , which may be identical or different, are selected from hydrogen and (C_1-C_6) alkyl,

- X_4 represents a group selected from single bond, $-CH_2-$, oxygen atom, sulphur atom optionally substituted by one or two oxygen atoms, and nitrogen atom substituted by hydrogen atom or (C_1-C_6) alkyl group,

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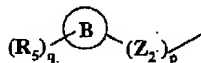
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• R_{12} represents an aromatic or non-aromatic, heterocyclic or non-heterocyclic, 5- or 6-membered ring which is unsubstituted or substituted with one or more groups, which may be identical or different, selected from (C_1-C_6) alkyl, halogen, hydroxyl and amino, and when the ring is heterocyclic, it comprises from 1 to 4 heteroatoms selected from nitrogen, oxygen and sulphur;

R_3 represents a group selected from:

- hydrogen;
- ~~(C_1-C_6) alkyl, (C_3-C_6) alkenyl, (C_3-C_6) alkynyl, these groups being unsubstituted or substituted with one or more groups, which may be identical or different, selected from amino, cyano, halo (C_1-C_6) alkyl, cycloalkyl, $C(=O)NR_{10}R_{11}$, $C(=O)OR_{10}$, OR_{10} , and SR_{10} , in which R_{10} and R_{11} , which may be identical or different, represent hydrogen or (C_1-C_6) alkyl;~~
- and the group of formula :



✓ in which p is an integer from 0 to 8 inclusive,

- ✓ Z_2 represents $-CR_{13}R_{14}$ wherein R_{13} and R_{14} , independently of each other, represent a group selected from hydrogen, (C_1-C_6) alkyl, phenyl, halo (C_1-C_6) alkyl, halogen, amino, OR_4 , SR_4 and $-C(=O)OR_4$ in which R_4 represents hydrogen or (C_1-C_6) alkyl, and
- when p is greater than or equal to 2, the hydrocarbon chain Z_2 optionally contains one or more multiple bonds,
- and/or one of the carbon atoms in the hydrocarbon chain Z_2 may be replaced with an oxygen atom, a sulphur atom which is unsubstituted or substituted with one or two oxygen atoms, a nitrogen atom which is unsubstituted or substituted with a (C_1-C_6) alkyl, or a carbonyl group,

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✓ B represents a group selected from:

- an aromatic or non-aromatic 5- or 6-membered monocycle comprising from 0 to 4 heteroatoms selected from nitrogen, oxygen and sulphur, and
- a bicycle, composed of two aromatic or non-aromatic, 5- or 6-membered rings, which may be identical or different, comprising from 0 to 4 heteroatoms selected from nitrogen, oxygen and sulphur,

✓ q is an integer from 0 to 7 inclusive,

✓ the group(s) R₅, which may be identical or different, is (are) selected from (C₁-C₆)alkyl, halogen, CN, NO₂, CF₃, OCF₃, -(CH₂)_kNR₁₅R₁₆, -N(R₁₅)C(=O)R₁₆, -N(R₁₅)C(=O)OR₁₆, -N(R₁₅)SO₂R₁₆, -N(SO₂R₁₅)₂, -OR₁₅, -S(O)_{k1}R₁₅, -SO₂-N(R₁₅)-(CH₂)_{k2}-NR₁₆R₁₇, -(CH₂)_kSO₂NR₁₅R₁₆, -X₇(CH₂)_kC(=O)OR₁₅, -(CH₂)_kC(=O)OR₁₅, -C(=O)O-(CH₂)_{k2}-NR₁₅R₁₆, -C(=O)O-(CH₂)_{k2}-C(=O)OR₁₈, -X₇(CH₂)_kC(=O)NR₁₅R₁₆, -(CH₂)_kC(=O)NR₁₅R₁₆, -R₁₉-C(=O)OR₁₅, -X₆-R₂₀, and -C(=O)-R₂₁-NR₁₅R₁₆ in which :

- X₇ represents a group selected from oxygen atom, sulphur atom optionally substituted by one or two oxygen atoms, and nitrogen atom substituted by a hydrogen atom or a (C₁-C₆)alkyl group,

- k is an integer from 0 to 3 inclusive,

- k₁ is an integer from 0 to 2 inclusive,

- k₂ is an integer from 1 to 4 inclusive,

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- R_{15} , R_{16} and R_{17} , which may be identical or different, are selected from hydrogen and (C₁-C₆)alkyl,
 - R_{18} represents a group selected from (C₁-C₆)alkyl, $-R_{21}-NR_{15}R_{16}$, $-R_{21}-NR_{15}-C(=O)-R_{21}-NR_{16}R_{17}$, and $-C(=O)O-R_{21}-NR_{15}R_{16}$ in which R_{21} represents a linear or branched (C₁-C₆)alkylene group, and R_{15} , R_{16} and R_{17} are as defined hereinbefore,
 - R_{19} represents a (C₃-C₆)cycloalkyl group,
 - X_6 represents a group selected from single bond, $-CH_2-$, oxygen atom, sulphur atom optionally substituted by one or two oxygen atoms, and nitrogen atom substituted by hydrogen atom or (C₁-C₆)alkyl group,
 - R_{20} represents an aromatic or non-aromatic, heterocyclic or non-heterocyclic, 5- or 6-membered ring, which is unsubstituted or substituted with one or more groups, which may be identical or different, selected from (C₁-C₆)alkyl, halogen, hydroxyl, oxo, cyano, tetrazole, amino, and $-C(=O)OR_4$ wherein R_4 represents hydrogen or (C₁-C₆)alkyl, and, when the ring is heterocyclic, it comprises from 1 to 4 heteroatoms selected from nitrogen, oxygen and sulphur,
- ~~with the proviso that when X_1 represents a nitrogen atom, X_2 cannot represent a carbon atom substituted with a methyl group or with $NH-CH_3$;~~
- optionally, the racemic forms thereof, isomers thereof, N-oxides thereof, and the pharmaceutically acceptable salts thereof.

Claim 2 (canceled).

Claim 3 (currently amended). A compound of formula (I) according to Claim 1 characterized in that:

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n is an integer from 1 to 6 inclusive,

Z_1 represents $-\text{CR}_8\text{R}_9$, wherein R_8 represents a hydrogen atom and R_9 represents a hydrogen atom or a methyl group, and

- when n is greater than or equal to 2, the hydrocarbon chain Z_1 optionally contains a double bond,
- or, one of the carbon atoms in the hydrocarbon chain Z_1 may be replaced with an oxygen atom, or a sulphur atom which is unsubstituted or substituted with one or two oxygens,

A represents a group selected from phenyl, pyridyl, thienyl, imidazolyl, furyl, and piperidyl, ~~1,3-benzodioxolyl, benzodioxinyl, benzothienyl, benzofuryl, benzofurazanyl, 2,1,3-benzothiadiazolyl, and indolyl,~~

m is an integer from 0 to 7 inclusive,

the group(s) R_2 , which may be identical or different, is (are) selected from $(\text{C}_1\text{-C}_6)\text{alkyl}$, halogen, $-\text{CN}$, $-\text{CF}_3$, $-\text{OCF}_3$, $-\text{NR}_{10}\text{R}_{11}$, $-\text{OR}_{10}$, $-\text{SR}_{10}$, $-\text{SO}_2\text{R}_{10}$, $-(\text{CH}_2)_k\text{SO}_2\text{NR}_{10}\text{R}_{11}$, $-\text{X}_5(\text{CH}_2)_k\text{C}(=\text{O})\text{OR}_{10}$, $-(\text{CH}_2)_k\text{C}(=\text{O})\text{OR}_{10}$, $-\text{X}_5(\text{CH}_2)_k\text{C}(=\text{O})\text{NR}_{10}\text{R}_{11}$, $-(\text{CH}_2)_k\text{C}(=\text{O})\text{NR}_{10}\text{R}_{11}$, and $-\text{X}_4\text{-R}_{12}$ in which:

- ✓ X_5 represents O, S or NH,
- ✓ k is an integer from 0 to 3 inclusive,
- ✓ R_{10} and R_{11} , identical or different, are selected from hydrogen and $(\text{C}_1\text{-C}_6)\text{alkyl}$,
- ✓ X_4 represents $-\text{CH}_2-$, or an oxygen atom,
- ✓ R_{12} represents a phenyl group which is unsubstituted or substituted with one or more groups, which may be identical or different, selected from $(\text{C}_1\text{-C}_6)\text{alkyl}$, halogen, hydroxyl and amino,

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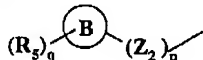
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optionally, the racemic forms thereof, isomers thereof, N-oxides thereof, and the pharmaceutically acceptable salts thereof.

Claim 4 (currently amended). A compound of formula (I) according to Claim 1 characterized in that:

R_3 represents hydrogen, ~~(C₁-C₆)alkyl~~ or the group of formula:



- in which p is an integer from 0 to 3 inclusive,
- Z_2 represents $-CR_{13}R_{14}$ wherein R_{13} and R_{14} , independently of each other, represent a group selected from hydrogen, methyl, or phenyl, and
 - when p is greater than or equal to 2, the hydrocarbon chain Z_2 optionally contains one double bond,
 - or one of the carbon atoms in the hydrocarbon chain Z_2 may be replaced with an oxygen atom, a sulphur atom which is unsubstituted or substituted with one or two oxygen atoms, a nitrogen atom which is unsubstituted or substituted with a (C₁-C₆)alkyl, or a carbonyl group,
- B represents a group selected from phenyl, pyridyl, thienyl, imidazolyl, furyl, 1,3-benzodioxolyl, benzodioxinyl, benzothienyl, benzofuryl, 2,1,3-benzothiadiazolyl, benzofurazanyl, naphthyl, and indolyl,
- q is an integer from 0 to 3 inclusive,
- the group(s) R_5 , which may be identical or different, is (are) selected from (C₁-C₆)alkyl, halogen, CN, NO₂, CF₃, OCF₃, $-(CH_2)_kNR_{15}R_{16}$, $-N(R_{15})C(=O)R_{16}$, $-(R_{15})C(=O)OR_{16}$, $-N(R_{15})SO_2R_{16}$, $-N(SO_2R_{15})_2$, $-OR_{15}$, $-S(O)_kR_{15}$, $-SO_2-N(R_{15})-(CH_2)_k-NR_{16}R_{17}$, $-(CH_2)_kSO_2NR_{15}R_{16}$,

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$-X_7(CH_2)_kC(=O)OR_{15}$, $-(CH_2)_kC(=O)OR_{15}$, $-C(=O)O-(CH_2)_{k2}-NR_{15}R_{16}$,

$-X_7(CH_2)_kC(=O)NR_{15}R_{16}$, and $-(CH_2)_kC(=O)NR_{15}R_{16}$ in which :

- X_7 is S, O or NH,
- k is an integer from 0 to 3 inclusive,
- k_1 is an integer from 0 to 2 inclusive,
- k_2 is an integer from 1 to 4 inclusive,
- R_{15} , R_{16} and R_{17} , which may be identical or different, are selected from hydrogen and (C_1-C_6) alkyl,

optionally, the racemic forms thereof, isomers thereof, N-oxides thereof, and the pharmaceutically acceptable salts thereof.

Claims 5 to 8 (canceled).

Claim 9 (previously presented). A compound of formula (I) according to Claim 1 characterized in that :

W represents an oxygen atom,

Y represents an oxygen atom,

Z represents a NH group,

Z_1 represents a methylene group,

and n is equal to one,

optionally, the racemic forms thereof, isomers thereof, N-oxides thereof, and the pharmaceutically acceptable salts thereof.

Claims 10 and 11 (canceled).

Claim 12 (previously presented). A compound of formula (I) according to Claim 1 characterized in that :

X_1 and X_3 represent each a -CH group,

and

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optionally, the racemic forms thereof, isomers thereof, N-oxides thereof, and the pharmaceutically acceptable salts thereof.

Claim 13 (currently amended). A compound of formula (I) according to Claim 1 characterized in that :

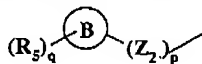
A represents a group selected from phenyl, and pyridyl, ~~1,3-benzodioxolyl, and benzofurazanyl,~~

m is equal to 0 or 1,

and R₂ represents a group selected from (C₁-C₆)alkoxy, hydroxy, halogen, and (C₁-C₆)thioalkoxy,

optionally, the racemic forms thereof, isomers thereof, N-oxides thereof, and the pharmaceutically acceptable salts thereof.

Claim 14 (previously presented). A compound of formula (I) according to Claim 1 characterized in that R₃ represents a group of formula :



in which:

p is equal to 1,

Z₂ represents a methylene group,

B represents a group selected from phenyl, pyridyl, 1,3-benzodioxolyl, and benzofurazanyl,

q is an integer from 0 to 2 inclusive,

and R₅ represent(s) a group selected from halogen, CN, -(CH₂)_kNR₁₅R₁₆,

-S(O)_{k1}R₁₅, -(CH₂)_kSO₂NR₁₅R₁₆, -(CH₂)_kC(=O)OR₁₅, -(CH₂)_kC(=O)NR₁₅R₁₆, and

-X₆-R₂₀, in which :

- k is an integer from 0 to 1 inclusive,
- k1 is an integer from 0 to 2 inclusive,
- R₁₅ and R₁₆, which may be identical or different, are selected from hydrogen and (C₁-C₆)alkyl,

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- X₆ represents a bond,
 - R₂₀ represents a 5-membered heterocyclic ring comprising from 3 to 4 heteroatoms selected from oxygen and nitrogen and optionally substituted with a methyl group or an oxo group,
- optionally, the racemic forms thereof, isomers thereof, N-oxides thereof, and the pharmaceutically acceptable salts thereof.

Claim 15 (currently amended). A compound of formula (I) according to Claim 1, which is:

- ~~— 1,3-Dimethyl-2,4-dioxo-1,2,3,4-tetrahydro-pyrido[3,4-d]pyrimidine-6-carboxylic acid (1,3-benzodioxol-5-ylmethyl)-amide,~~
- ~~3-Benzyl-1-methyl-2,4-dioxo-1,2,3,4-tetrahydro-pyrido[3,4-d]pyrimidine-6-carboxylic acid (1,3-benzodioxol-5-ylmethyl)-amide,~~
 - Methyl 4-[6-(4-Methoxy-benzylcarbamoyl)-1-methyl-2,4-dioxo-1,4-dihydro-2H-pyrido[3,4-d]pyrimidin-3-ylmethyl]-benzoate,
 - 4-[6-(4-Methoxy-benzylcarbamoyl)-1-methyl-2,4-dioxo-1,4-dihydro-2H-pyrido[3,4-d]pyrimidin-3-ylmethyl]-benzoic acid,
 - 4-[6-(3-Methoxy-benzylcarbamoyl)-1-methyl-2,4-dioxo-1,4-dihydro-2H-pyrido[3,4-d]pyrimidin-3-ylmethyl]-benzoic acid, and
 - 3-(4-Cyano-benzyl)-1-methyl-2,4-dioxo-1,2,3,4-tetrahydro-pyrido[3,4-d]pyrimidine-6-carboxylic acid 4-methoxy-benzylamide.

Claims 16 to 28 (canceled).

Claim 29 (currently amended). A pharmaceutical composition comprising a compound according to any one of ~~Claims 1, 3, 4, 8, 9, 11-15~~ Claims 1, 3, 4, 9, or 11-15 inclusive and a pharmaceutically acceptable excipient.

Claims 30 and 36 (canceled).

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Claim 37 (currently amended). A method for treating a disease or complaint involving a therapy by inhibition of MMP-13 characterized in that the disease or the complaint is arthritis, the method comprising the administration of an effective amount of a compound according to any one of ~~Claims 1, 3, 4, 8, 9, 11-16~~ Claims 1, 3, 4, 9, or 11-15 inclusive to a patient having arthritis.

Claim 38 (currently amended). A method for treating according to Claim 37, ~~characterized~~ characterized in that the disease is osteoarthritis.

Claim 39 (currently amended). A method for treating according to Claim 37, ~~characterized~~ characterized in that the disease is rheumatoid arthritis.